THE ROBOT TAKEOVER: WHAT'S IN IT FOR WORKERS AND CORPORATIONS

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Frederick Engels, the genius of the theory of sciences, observed, "The acceleration in the rate of the development of science so to say is in proportion to the square of the distance (in terms of time) from its point of departure." And, he added, "But science grows with at least the same rate as population - population grows to the size of the latest generation, while science advances in proportion to the mass of knowledge inherited from the preceding population. Consequently, in most usual conditions, it also grows in geometrical proportions."

It is impossible to discuss the effects of new technology without some reference to science because technology is a fast-changing and developing science. It is presenting new problems daily, both long term and

short term.

High technology is related to production, jobs and corporate profits, the corporate mega-mergers and capital investments. In order to keep abreast of many questions in the field of economics, science, politics and international affairs it is necessary to know the state of the art, the level of technology industry by industry.

With each new generation of technology solutions to the problems that arise as a result are more and more difficult to come by. Even from this viewpoint we have to stay on top of these quick-paced developments.

As incredible as it seems today with all the new technology, the fact is that high technology has reached only the foothills of the technological mountain it will climb. To this point, the climb has been the easiest and least costly part of the trip. It is, in a sense, the beginners slope we are practicing on.

In spite of this, many of the climbers have already dropped out; some because they didn't have the necessary equipment or had the wrong kind of equipment, and others simply ran out of gas. The chips and robots are now poised to start to climb the more difficult levels of the high technology mountain.

But to do this they need more sophisticated equipment and huge sums of capital. They now need equipment that can feel, hear, see and carry out more

complicated calculations at the speed of sound. They need equipment that can climb by itself, as well as equipment that can relate to each other and climb as a team. In fact, climbing alone is becoming almost impossible. This is a whole new level of super-sophisticated equipment. One of the main reasons for the incredibly high cost is the need to make the pieces of equipment that can inter-relate and work together. And to do so without the direct touch of the human hand.

The history and the success of the microchip - which is the brain and nerve center of the new high technology - is measured by hos many, how fast and how small, i.e., how many messages and how fast it can transmit them in the smallest possible area, how fast it can handle the most messages in the shortest possible time.

The new generation of chips, in depth, width and height, are about 25,000th of an inch and must handle hundreds of thousands of messages in no time. Each new generation is smaller, faster and can handle more messages.

The power source for the new microchips will be photons, the light particles. Thus, the new chips will be measuring transmissions by the speed of light. This calls on science to probe new laws of nature and come up with appropriate scientific knowledge.

Some new problems are cropping up that are affecting the application of high technology.

There is a new law of micro chips that is now generally accepted: the smaller the chip, the more factory defects; the more breakdowns and the faster the chip wears out.

And as the chip gets smaller the testing becomes a more difficult process. There should be factory inspection. This has become a bigger and bigger problem. For example, the testing, replacing and repairing of a 50 cent chip can run up to $100,000. This, of course, is prohibitive especially for small outfits.

Chips are getting so small and the insulation that separates the lines of transmission so thin, that the production process itself damages the chips. Thus, the production process also becomes more difficult.

One of the solutions in the offing is the production of the silicone crystal matterials in outer space. But again, this is out of reach for most countries and for most private corporations.

But their is no process by which each of the chips can be guaranteed against flaws in production or even by the most sophisticated testing.

This is one major reason why the so-called Star Wars Shield can never work. It is impossible to guarantee even with inspection and testing. And Star Wars will require millions of these microchips. If only

one chip fails the whole system collapses. And there is no fully trustworthy chip. And the likelihood of coming up with one is almost zero because as the technology develops, the chips become even more difficult to guarantee.

They try to get around this by saying they will build a number of separate sections and hook them together to make one shield. More and more scientists are in agreement that the whole project is fatally flawed. The space shuttle has been grounded a number of times because a single chip was flawed.

To continue. Another problem with microchips is the fact that when objects become miniscule we lose the ability to observe them without distorting it.

In addition, the life span of so small an object is like the blinking of an eye.

These are new problems in the technology, in the production and testing of micro chips.

THE ECONOMICS OF NEW TECHNOLOGY

The state of the art in micro chips today raises many new questions about high technology and capitalism.

Is there a limit as to how much capital can be invested on high technology and still remain cost effective, i.e., still remain profitable, even for mega-corporations? This is a real question.

The evidence is that there is a point of no return, or not enough returns for the monopolies, at least in some industries. This is one of the reasons why the transition to high tech has slowed down in some basic industries.

For example, even a small high tech material handling system in warehouses runs in the area of $30 million. And there are only 90 such systems in the United States, out hundreds of thousands such systems where high tech could be used.

There are problems even when high tech is used for inspection jobs. It is not easy to get a robot-size system for inspection because the system must be programmed with a perfect model so the computer can compare and identify a defect - a difference from the model. To perfect a highly sophisticated, complicated perfect model is also extremely expensive.

To set up a factory run by robots it is necessary to redesign the factory, the manufacturing process and the product itself, including all of the parts. In the old factories the ordinary manufacturing process and the old shape and size of parts cannot be used. This runs into big capital. In the existing factories, with the old processes and parts, it is only possible to install robots to do some of the operations. This is the most widely accepted practice in U.S. factories today.

Monopoly capital agrees that this is not where

the biggest profits are. The biggest are in totally robot-operated factories. This is much more expensive but also where the big bucks are.

For example, IBM has one of these new robot-operated factories. They have designed a new typewriter. Each part was designed so that robots can handle them.

Another,Caterpillar Corporation, just invested $600 million in high tech. With this investment, they eliminated 20,000 jobs out of some 60,000. This, of course, is good for business and bad for workers. And these 20,000 are not being retrained for new jobs. They are just simply thrown out.

QUESTIONS & CONCLUSIONS

These new high tech problems raise many other new questions.

For example, can high tech be cost effective in low-wage countries? And, if not, will the multinationals push high tech in these countries.

I don't think so. They will not invest capital for high tech to compete with low wages.

Or, will the transition to high tech production continue without much greater government investment.

I don't think so. The demand by corporations is not only for government cash for research but capital for construction and the new high tech equipment.

Or,what effect are these developments having on further monopolization. Will they speed up the process?

I think so. The mega-mergers are related to high tech. High tech in Star Wars and production of robots was involved in both the GM takeover of Hughes Aircraft and the merger of GE and RCA.

Will high tech effect state monopoly relationships? I think so. The relationship between the state and monopoly capital will get closer, more intertwined.

The mega corporations will increase their grip on both the political and the economic structure. And the state will become much more involved in high technology investment and application. It will more and more become a source of capital for research and construction.

Will high tech effect long-range unemployment? I think so. It will increase. There will be many other caterpillar corporations.

During the last ten years employment has increased in the service and communication sectors. Will this continue?

I don't think so. High tech is moving in fast on these jobs now. To this point the service and communication sectors have been expanding. But now, increasingly high tech is taking over. For example, from jobs requiring paper work,from inventories to bookkeeping, to communications.

Can there be so-called reindustrialization projects without dealing with the new problems of the new level of mniaturized computer micro chips and robotic developments.

I don't think so. It is not possible to go back to "the good old chipless days" in any industry. Everyone has to deal with the new level as an ongoing technological revolution. This is becoming a decisive factor in all areas of state monopoly capital.

Is there a relationship between the structural crisis and high tech?

Very much so. The new technology has speeded up and deepened the structural crisis. It has made it more difficult for the economy to crawl out of it. On the other hand, the structural crisis has slowed down the application of the new technology. This is so in the steel industry, in machine building, ship building and many other industries.

This has resulted in an uneven development process. Some industries have moved ahead. The unevenness also shows up within industries. The more monopolized corporations have moved faster.

Is high tech an important factor in the emergence of the Japanese-U.S. global syndicates.

Yes. Japan uses high technology as capital in its negotiations for joint ventures. This will become even more so because in many areas Japan is winning the micro

chip war. It is becoming more dominant. For the present, Silicon Valley is a victim of this process.

This is not a temporary, cyclical phenomenon. I don't think there are any new factories today without the input of Japanese high tech. Thus, areas like Silicon valley will continue to decline. It will be a depressed area for the unforseeable future.

SOME LONG RANGE & SIDE EFFECTS

High tech is increasingly becoming a factor in the monopolization of industries. As the cost goes up and as a side effect, smaller companies become feudal, low-wage satellites to high tech industries, as in Japan.

High tech has an increasing effect on the role of finance capital. The increasing costs are the cause of relatively high interest rates.

It has an increasing effect on state-monopoly-capital relationships, because of the increasing need for government financing.

And, above all else, it has an effect on the class relationship, on the class struggle.

It gives a whole new quality to speed up in production.

It gives a new meaning to higher rates of exploitation, to higher profits per worker.

It gives a new meaning to the question of

alienation, the relationship of the worker to production. Instead of workers running machines, there is a growing feeling that the machines are running the workers. The workers have less and less control over the work process.

In the process workers have become cumputerized. They are monitored by the computer every second of the 8 hours. They increasingly become an integral part of the computerized system. This creates a new level of dehumanization of the workplace. It is alienation of a deeper kind.

It changes the role of secondary management and white collar workers. It eliminates many of these jobs and in this process it creates changes in class status of these people.

THE CONTINUING DEBATE

Will rebots become more and more human with a human-like brain? This is not possible simply because science knows relatively little about how the human brain works.

How does high tech effect the competition between the two world social systems, socialism and capitalism.

One can say that the socialist countries have been comparatively slow in applying high technology. This is not explained by any lack of scientists, engineers, technicians or know-how. They have all the

prerequisites. In fact, the Soviet scientists developed cybernetics, which is the basis of high technology.

It is a generally accepted fact that the Soviet Union has more technical and technological ideas than any other nation. Soviet inventions are used all over the world, including many in the United States.

Their slowness in application of high tech is caused by other factors. Apparently some in the socialist countries held to the idea that they had to first build a powerful basic industrial base before going into high tech. There is much to be said for this. The Soviet Union had to develop new regions, build more factories and plants, create whole new industrial sectors and build the huge industrial foundation. This included the rebuilding of the regions destroyed by the Nazi hordes.

Now the Soviet Union has created a vast production, scientific and technological potential on which the new concept of all around intensive development is based.

Another explanation is that there was no burning necessity for high tech because the socialist countries, including the USSR, have seemingly unlimited resources, including human reserves.

It is possible there were some concepts that spontaneity would take care of scientific matters, i.e., the idea that science will develop without a struggle

for it. This has now been changing very fast. The vast, widespread use of computers even in grade school is evidence of this change.

In the socialist countries, the drive for high tech is related to increasing labor productivity. It is related to the drive to end the waste of materials.

In the competition between the two systems, socialism cannot fully overtake capitalism in production, in labor productivity, in standard of living, in overall quality of life, in becoming a world showcase of socialism without a full-scale, all out development of high tech - computers, micro-chips, robots, fusion energy, etc.

Also, under socialism there are no negative social consequences from high tech. There are job changes, retraining programs, but no big problems of displacing people and creating unemployment. The source of capital for high tech is not dependent on private corporations, as it is under capitalism.

For this and other reasons, I think the Soviet Union and the other socialist countries are in the first stage of a qualitative leap and high tech is a big factor.

In other capitalist countries, like England, West Germany and France, high techology is an even slower process. In the areas of these economies where the U.S. Pentagon has awarded Star Wars contracts, like England

and West Germany, it has become a method of "buying" their technological know-how. But the application is slower.

Of course this greatly affects the uneven development of capitalism. Outside of the mini-mills, the rest of the steel industry is not on a high technological level in the U.S. Basic steel was the most advanced U.S. industry. Now it is twenty-five years behind most countries that produce steel.

Uneven development in the imperialist countries will be a big factor for a long time. Countries that move more into high technology will gain advantages over those who do not. It is a powerful factor and it will continue to influence most areas of the world.

On the other hand, Japan early understood the need for high technology because of their limited natural resources. Japan early took to picking up every idea in every area of the world. It had a policy of picking up these ideas, bringing them home and developing them.

There is no evidence, no signs that the gap between the U.S. and Japan is narrowing. In fact, the trade gap is increasing.

STAR WARS & HIGH TECH

Star Wars is an obstacle to high tech because of its immense size. It is bigger than any project in the

last 50 years, including the moon projects. 75% of all research funds and 20% of all investment capital goes into Star Wars projects.

Star Wars soaks up six times more scientists and engineers than any other industry.

There is a general consensus that non-military spinoffs from the developments in Star Wars projects will not be as useful as those from such projects as the moon missions. Star Wars does not produce that kind of technology.

The fact is that most corporations are not working on a shield. In these areas there will be technological development that can be used for other military applications.

Reagan has the illusory idea of the non-nuclear shield and that it can be 100% protection. The big corporations and most others do not have this illusion and aren't working on this concept. Even scientists working on Star Wars projects don't believe in it. Many outfits are working on miniaturized offensive weapons in space.

If passed, the new tax bill will effect high technology. The sharp drop in depreciation allowances will effect the amount of money available for research and production.

HISTORIC FRAMEWORK FOR HIGH TECH

Capitalism can't do without it, it can't do with it and capitalism can't stop it. And, capitalism can't go back to the old days and ways.

In a sense, the chips and robots are more and more becoming the modern-day sophisticated gravediggers of capitalism.

The process of the development and application of high technology keeps raising problems that capitalism has more and more difficulties with:

Many of the corporate debts are chip n'robot debts.

Chips and robots are good producers, but very poor consumers.

The problem of robots came up at the recent AFL-CIO Convention. They didn't come up with good answers. But neither have we. But we have to come up with some soon. For example, how to deal with the 20,000 jobs lost at Caterpillar? Or the 20 million long-term unemployed? What kind of demands and contract clauses can the unions begin to fight for to alleviate the negative effects of high tech on workers?

Of course, the real future of chips and robots is in outer space. The future generation of chips will actually be produced in outer space, without the interference of gravity and the earth's dust. Some crystals are already being produced in outer space by the Soviet Union. It is the wave of the future.

However, at today's state of the art, we have to look for bold, far-reaching ideas in order to alleviate the effects of high technology on the working class in capitalist countries. In order to come up with new tactics, new solutions, new ideas we have to become experts in high technology and how it effects industries, the economy, politics and international affairs.

We Marxist Leninists must not lag behind the times on this question. We have the tools, the equipment and the materials to catch up and stay up to date on high technology. Without the necessary up to date knowledge we can't develop the appropriate tactics to help the working class deal with high technology.